

Boil Water Notice Guidance Document

This Guidance Document applies to all Public Community (PCWS), Non-Transient Non-Communities (NTNCs), and Transient Non-Communities (TNCs) Water Systems.

Issuing a Boil Water Notice

A Boil Water Notice is issued when a pathogenic threat exists or has a reasonable potential to exist that can be resolved by boiling the water for an appropriate length of time. The Boil Water Notice advises the consumers to boil their drinking water at a rolling boil for a minimum of 1 minute before consumption (see the Boil Water Public Notice template for complete directions).

The water supplier shall effectively notify the public, per Federal public notice requirements and Vermont Water Supply Rule and Drinking Water and Groundwater Protection Division policies, as soon as possible, but no later than 24 hours following:

1. A Boil Water Notice issued by the Drinking Water and Groundwater Protection Division.
2. An Acute Maximum Contaminant Level (MCL) total coliform rule violation. An Acute MCL occurs when both a routine and a repeat sample have coliform present and one sample has *E. coli* or fecal coliform present.
3. Three or more total coliform test results reported coliform bacteria present in a month.

The reasons that a Boil Water Notice should be delivered to the public are listed below. The Boil Water Notice shall remain in effect until the Operations and Compliance Section has notified the Public Water System (PWS) over the phone and in writing that the Notice may be lifted.

Boil Water Notice May Be Issued When:

1. The PWS has an acute MCL total coliform violation. An acute MCL occurs when a routine and a repeat sample have coliform present and one sample has *E. coli* or fecal coliform present.
2. Three or more total coliform test results reported coliform bacteria present in a month or if the initial monitoring sample is coliform present and two repeat samples have coliform present.
3. Persistent acute or non-acute Total Coliform Rule MCL violations occur.
4. Evidence of a disease outbreak in a community where available data suggest drinking water may be a source of infection.
5. Positive test results for pathogens (e.g., *Cryptosporidium*, *Giardia*, *Shigella*).
6. Use of an emergency source that complies with the MCLs for chemical contaminants but is determined to be vulnerable to pathogenic contamination because the source does not meet Drinking Water and Groundwater Protection Division standards.
7. Any event occurs that significantly impacts the integrity of the distribution system in conjunction with an indication of a human health hazard (e.g., major break, confirmed cross connection).
8. The PWS is hauling water. Practice 98-09 will apply.
9. The PWS is experiencing unusually low water pressure and/or is out of water.
10. A PWS is required to chlorinate at any given time, but the chlorinator is malfunctioning such that a free-chlorine residual cannot be maintained at all points in a distribution system.
11. A PWS's source has been determined to be under the influence of surface water (GWUDI) by the Drinking Water and Groundwater Protection Division and the PWS does not have the capabilities

to provide 4-log virus inactivation via continuous disinfection as required by the VT Water Supply Rule.

12. The malfunction of any treatment plant occurs such that effluent turbidity levels are elevated above the standard.
13. The PWS experiences possible bacteriological contamination due to system deficiencies.
14. Muddy or discolored water is experienced by a significant number of individuals on a system.
15. A natural disaster that may adversely affect water quality and/or quantity (e.g., hurricane, flood, earthquake).
16. Test results report the presence of coliform or *E. coli* bacteria and the PWS has not taken any repeat samples within the required time period.

Rescinding a Boil Water Notice

The following scenarios identify the criteria required prior to the Drinking Water and Groundwater Protection Division rescinding a Boil Water Notice:

1. System Deficiencies *are* a Likely Cause of Microbiological Contamination.

The Operations and Compliance section will determine if system or source deficiencies are the primary cause of contamination through either a site visit, and/or valid observations obtained from the system operator or a third party. Repeat samples should be collected from the source and throughout the distribution system to help locate the likely source of contamination. When the Operations and Compliance Section determines that system or source deficiencies *are* the primary cause of the microbiological contamination and a Boil Notice is required, the PWS must correct such deficiencies prior to the Operations and Compliance Section considering lifting the Boil Notice. The PWS must submit in writing that improvements have been made and deficiencies have been corrected. Following system improvements or repairs, the PWS must shock chlorinate the system in accordance with the Vermont Water Supply Rule, Appendix A, Subpart 2.16.

After shock disinfection and flushing, and documentation of system repairs approved by the Operations and Compliance Section, the PWS must collect one (1) Coliform sample per day for three consecutive days. The Operations and Compliance Section will rescind the Boil Notice if all sample results are coliform absent.

2. System Deficiencies *are NOT* a Primary Cause of Microbiological Contamination

a. Systems *without* Stand-by Disinfection

When the Operations and Compliance Section determines that system or source deficiencies *are not* the primary cause of the microbiological contamination the PWS will remain on a Boil Water Notice until at least two consecutive months of Coliform absent sample results are submitted to the Operations and Compliance Section. The PWS must take a minimum of (1) Total Coliform Sample each month for two consecutive months. Please note that the PWS may choose to shock chlorinate the system while under a Boil Water Notice, but no chlorination should be in the system at the time of sampling for PWSs that do not have a permitted chlorination treatment system. During the boil period, the PWS should search for system or source deficiencies to determine the primary cause of contamination.

At the conclusion of two consecutive months of Coliform absent sample results, the Operations and Compliance Section will lift the Boil Notice. Conversely, if as a result of continued inspection of the system, the PWS identifies system or source deficiencies as a primary cause of contamination, the situation converts to scenario # 1 above for lifting the Boil Water Notice.

b. Systems *with* Stand-by Disinfection but Not Actively Chlorinating

When the Operations and Compliance Section determines that system or source deficiencies *are not* the primary cause of the microbiological contamination, and when the system is able to activate a stand-by disinfection unit, the PWS is required to activate this chlorination or Ultraviolet (UV) disinfection unit. The Operations and Compliance Section will lift the Boil Notice when: the PWS collects one (1) Coliform sample per day for three consecutive days and all test results report Coliform absent; are continuing chlorine disinfection; and have reported free-chlorine residual on the lab test results reported. The required minimum free chlorine residual at a distribution sampling site is 0.1 milligrams per liter (mg/L). The PWS must take and record the chlorine residual on the sample forms that accompany the Coliform sample bottles sent to the laboratory.

The PWS must agree to operate the disinfection unit for 60 days following lifting of the Boil Notice. The stand-by chlorination system must have adequate contact time between the disinfectant and the drinking water to ensure effective pathogen inactivation. While the chlorinator is in-use, free-chlorine residuals entering the distributions system must be recorded on the Monthly Operating Report daily and a copy of these results must be sent to the Operations and Compliance Section until the stand-by chlorinator is turned off.

c. Systems Actively Chlorinating

PWSs already chlorinating or which continuously chlorinate will follow (b) above.

The Operations and Compliance Section may require a PWS to Operations and Compliance disinfect at 4-log inactivation of viruses depending on the location and/or source of bacteriological contamination.

Operations and Compliance Contacts

Please direct any questions regarding issuing or coming off a Boil Water Notice to the Drinking Water and Groundwater Protection Division, Operations and Compliance Section. Water Systems placed on a Boil Water Notice by the Operations and Compliance Section must obtain permission from the Operations and Compliance Section before lifting the boil. For Transient Non-Community Water Systems please contact Megan Young at 802-338-4825. For Community and Non-Transient Non-Community Water Systems please contact Eamon Twohig at (802) 585-4902.

This guidance sheet and related environmental information are available electronically at
<http://www.drinkingwater.vt.gov>

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